

REMARKS

Initially, Applicants filed an Information Disclosure Statement (IDS) on February 6, 2008. The Examiner returned a copy of the Form PTO-1449 that accompanied the IDS. On that Form PTO-1449, the Examiner did not indicate that the non-patent document, cited on the Form PTO-1449, was considered (namely, the copy of the final Office Action issued in U.S. Patent Application No. 09/942,625). Applicants request that the Examiner consider this document and indicate that the document was considered by initialing the Form PTO-1449 and returning a copy of the initialed Form PTO-1449 with the next communication.

In the non-final Office Action, the Examiner rejected claims 1-61 under 35 U.S.C. § 103(a) as unpatentable over Zhang et al. (U.S. Patent No. 6,795,506) in view of Echeita et al. (U.S. Patent No. 6,078,958).

Initially, Applicants note that the Examiner did not reject claims 62 and 63, but also did not identify these claims as allowable. Applicants noted this deficiency in the Pre-Appeal Brief Request for Review, filed December 28, 2007, which resulted in the re-opening of prosecution and the issuance of the above-identified non-final Office Action. Applicants assume that the Examiner intended to identify claims 62 and 63 as containing allowable subject matter. If this assumption is incorrect, then Applicants request that the Examiner properly identify the status of claims 62 and 63.

By this Amendment, Applicants amend claims 2, 3, 5-9, 11, 12, 14-20, 22-28, 30, 31, 33-39, 41-46, 49-54, 59, 62, and 63 to improve form. Applicants respectfully traverse the Examiner's rejection under 35 U.S.C. § 103. Claims 1-57, 59, and 61-63 remain pending.

In paragraphs 1-25 of the Office Action, the Examiner rejected pending claims 1-57, 59, and 61 under 35 U.S.C. § 103(a) as allegedly unpatentable over Zhang et al. in view of Echeita et al. Applicants traverse the rejection.

Applicants note that the Examiner continues to reject claims 58 and 60—even though these claims were previously canceled.

Independent claim 1, for example, is directed to a system comprising a memory configured to store data associated with a plurality of incoming streams of different speeds; an interface controller comprising a first arbitration element to arbitrate among the streams to store the data in the memory, the first arbitration element including a number of first entries, one of the first entries indicating which of the streams is to be serviced in a particular first time slot, the streams being assigned to the first entries based on the speeds of the streams; and a dispatch unit comprising a second arbitration element to arbitrate among the streams to read the data from the memory, the second arbitration element including a number of second entries, one of the second entries indicating which of the streams is to be serviced in a particular second time slot, the streams being assigned to the second entries based on the speeds of the streams.

Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 1. For example, Zhang et al. and Echeita et al. do not disclose or suggest an interface controller that comprises a first arbitration element to arbitrate among a plurality of streams of different speeds to store data in a memory, where the first arbitration element includes a number of first entries, one of the first entries indicates which of the streams is to be serviced in a particular first time slot, and the streams are assigned to the first entries based on the speeds of the streams, as recited in claim 1.

The Examiner alleged that Zhang et al. discloses these features and cited column 5, lines 51-67, of Zhang et al. for support (Office Action, paragraph 1). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 5, lines 51-67, Zhang et al. discloses:

In yet another aspect, the present invention relates to a system for providing compressed video data over a transmission channel. The system comprises means for receiving a first compressed bitstream including first video data and a second compressed bitstream including second video data. The system also comprises means for obtaining bit rate information from the first compressed bitstream, the bit rate information describing the bit rate of the first video data. The system further comprises means for scheduling the first compressed bitstream including the first video data and the second compressed bitstream including the second video data using the bit rate information to provide a compressed bitstream comprising the first video data and the second video data. The system additionally comprises means for transmitting the compressed bitstream comprising the first video data and the second video data over the transmission channel.

In this section, Zhang et al. discloses means for scheduling a first compressed bitstream and a second compressed bitstream using bit rate information from the first compressed bitstream. Nowhere in this section does Zhang et al. disclose anything similar to a first arbitration element that includes a number of entries, let alone, an interface controller that comprises a first arbitration element to arbitrate among a plurality of streams of different speeds to store data in the memory, where the first arbitration element includes a number of first entries, one of the first entries indicates which of the streams is to be serviced in a particular first time slot, and the streams are assigned to the first entries based on the speeds of the streams, as recited in claim 1.

Echeita et al. also does not disclose or suggest an interface controller that comprises a first arbitration element to arbitrate among a plurality of streams of different speeds to store data in the memory, where the first arbitration element includes a number of first entries, one of the first entries indicates which of the streams is to be serviced in a particular first time slot, and the

streams are assigned to the first entries based on the speeds of the streams, as recited in claim 1. Thus, the disclosure of Echeita et al. does not cure the deficiencies in the disclosure of Zhang et al.

Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, also do not disclose or suggest a dispatch unit that comprises a second arbitration element to arbitrate among the streams to read the data from the memory, where the second arbitration element includes a number of second entries, one of the second entries indicates which of the streams is to be serviced in a particular second time slot, and the streams are assigned to the second entries based on the speeds of the streams, as further recited in claim 1.

The Examiner admitted that Zhang et al. does not disclose or suggest these features (Office Action, paragraph 1). The Examiner alleged that Echeita et al. discloses a broadcast center that includes a media concentrator with arbitration that has multiple information inputs for providing information to compressors that compress or process the input data and determine the rate of compression, and cited column 3, lines 46-59, of Echeita et al. for support (Office Action, paragraph 1). Regardless of the accuracy of the Examiner's interpretation of Echeita et al., the Examiner has not established that Echeita et al. discloses or suggests a dispatch unit that comprises a second arbitration element to arbitrate among the streams to read the data from the memory, where the second arbitration element includes a number of second entries, one of the second entries indicates which of the streams is to be serviced in a particular second time slot, and the streams are assigned to the second entries based on the speeds of the streams, as recited in claim 1. Thus, the Examiner has not established a prima facie case of obviousness with regard to claim 1.

At column 3, lines 46-59, Echeita et al. discloses:

Referring now to FIG. 3, a portion of a preferred embodiment of the broadcast center 13 is generally shown. The broadcast center 13 preferably includes a media concentrator with arbitration, generally shown at 20 for processing information onto one of multiple carrier frequencies. The media concentrator with arbitration 20 has multiple information inputs 24, 24' and 24" for providing digital information to compressors 26, 26' and 26" for eventual uplink to satellite 15. Compressors 26, 26' and 26" receive the input data, compress or process the input data, determine the rate of compression, and output the processed information and the rate of compression on outputs 28-28" and 30-30", respectively. The processed information and the rate of compression is provided to storage device 32 for storage.

In this section, Echeita et al. discloses a media concentrator with arbitration that processes information onto one of multiple carrier frequencies. While this section of Echeita et al. mentions the word "arbitration," this section of Echeita et al. does not disclose or remotely suggest a dispatch unit that comprises a second arbitration element to arbitrate among the streams to read the data from the memory, where the second arbitration element includes a number of second entries, one of the second entries indicates which of the streams is to be serviced in a particular second time slot, and the streams are assigned to the second entries based on the speeds of the streams, as recited in claim 1.

For at least these reasons, Applicants submit that claim 1 is patentable over Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination. Claims 2-20 and 59 depend from claim 1 and are, therefore, patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 1. Claims 2-20 and 59 are also patentable over Zhang et al. and Echeita et al. for reasons of their own.

For example, claim 2 recites that the memory includes a plurality of memory buckets corresponding to the streams. Zhang et al. and Echeita et al., whether taken alone or in any

reasonable combination, do not disclose or suggest this feature. The Examiner alleged that Zhang et al. discloses this feature and cited column 28, line 65 - column 29, line 3, of Zhang et al. for support (Office Action, paragraph 3). Applicants submit that Zhang et al. does not provide support for the Examiner's allegation.

At column 28, line 64 - column 29, line 3, Zhang et al. discloses:

In an alternative embodiment, processor 863 is specially designed hardware for controlling the operations of router 810. In a preferred embodiment, a memory 861 (such as non-volatile RAM and/or ROM) also forms part of CPU 862. However, there are many different ways in which memory could be coupled to the system.

In this section, Zhang et al. discloses that CPU 862 includes a memory 861 that may take the form of non-volatile RAM and/or ROM. Even assuming, for the sake of argument, that memory 861 can be equated to a memory configured to store data associated with a plurality of incoming streams of different speeds (a point that Applicants do not concede), Zhang et al. does not disclose or remotely suggest that memory 861 includes a plurality of memory buckets corresponding to the plurality of streams of different speeds, as recited in claim 2.

For at least these additional reasons, Applicants submit that claim 2 is patentable over Zhang et al. and Echeita et al. Claim 3 depends from claim 2 and is, therefore, also patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 2.

Claim 4 recites that each of the first entries includes a stream number that identifies one of the streams. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner alleged that Zhang et al. discloses this features and cited column 21, lines 52-67, of Zhang et al. for support (Office Action, paragraph 5). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 21, line 52 - column 22, line 1, Zhang et al. discloses:

The rate controller 409 connects to both the bit rate converter apparatus 406 and the scheduler 411 and determines what bit rate is to be used for each input compressed bitstream. More specifically, based on messages received from the rate controller 409, the bit rate converter apparatus 406 adjusts the bit rate for each compressed bitstream. In one embodiment, the objective of the rate controller 409 is to determine whether to apply more aggressive transcoding and bit rate conversion to a particular compressed bitstream and use the saved bandwidth resulting therefrom for a different compressed bitstream. In a statistical re-multiplexing environment for example, if a particular compressed bitstream is encoded with fewer number of bits, then the remaining compressed bitstreams in the multiplex will be able to use more bits, resulting in a quality trade-off between different compressed bitstreams via bandwidth re-allocation.

In this section, Zhang et al. discloses a bit rate converter apparatus 406 that adjusts the bit rate for each compressed bitstream so that saved bandwidth can be used for a different compressed bitstream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or remotely suggest a first arbitration element that includes a number of first entries, let alone that each of the first entries includes a stream number that identifies one of the streams, as recited in claim 4.

For at least these additional reasons, Applicants submit that claim 4 is patentable over Zhang et al. and Echeita et al. Claims 6-8 depend from claim 4 and are, therefore, also patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 4.

Claim 5 recites that the number of the first entries in the first arbitration element is programmable. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or remotely suggest this feature.

The Examiner alleged that Zhang et al. discloses this feature and cited column 21, lines 52-67, of Zhang et al. for support (Office Action, paragraph 6). Applicants submit that Zhang et al. does not support the Examiner's allegation.

At column 21, line 52 - column 22, line 1 (reproduced above), Zhang et al. discloses a bit rate converter apparatus 406 that adjusts the bit rate for each compressed bitstream so that saved bandwidth can be used for a different compressed bitstream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or remotely suggest a first arbitration element that includes a number of first entries, let alone that the number of the first entries in the first arbitration element is programmable, as recited in claim 5.

For at least these additional reasons, Applicants submit that claim 5 is patentable over Zhang et al. and Echeita et al.

Claim 9 recites that the first and second arbitration elements are synchronized. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner alleged that Zhang et al. discloses this feature and cited column 19, lines 41-54, of Zhang et al. for support (Office Action, paragraph 10). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 19, lines 41-55, Zhang et al. discloses:

In order to effectively extract and use the bit rate information, it is synchronized with a compressed elementary stream by the encoding multiplexer, e.g. the scheduler 66 of FIG. 3C in a timely manner. In one embodiment, the bit rate information is inserted prior to the start of the access unit it is associated with. More specifically, it is inserted just before the picture_start_code of the associated access unit, but not before the picture_start_code of the previous access_unit.

FIG. 4C illustrates the insertion of a transport packet 360 containing the bit rate

information 302a into a transport stream 362 according to one embodiment of the present invention. The transport stream 362 includes three transport packets 364, 366 and 368 that contain packetized data from access unit (N-1) 370 and access unit (N) 372.

In this section, Zhang et al. discloses that the encoding multiplexer (e.g., scheduler 66) synchronizes the bit rate information with a compressed elementary stream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or suggest a first arbitration element or a second arbitration element, as recited in claim 1, let alone first and second arbitration elements that are synchronized, as recited in claim 9. Synchronization of bit rate information with a compressed elementary stream cannot reasonably be equated to first and second arbitration elements that are synchronized, as recited in claim 9.

For at least these additional reasons, Applicants submit that claim 9 is patentable over Zhang et al. and Echeita et al.

Claim 10 recites that each of the second entries includes a stream number that identifies one of the streams. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner alleged that Zhang et al. discloses this feature and cited column 21, lines 52-67, of Zhang et al. for support (Office Action, paragraph 11). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 21, line 52 - column 22, line 1 (reproduced above), Zhang et al. discloses a bit rate converter apparatus 406 that adjusts the bit rate for each compressed bitstream so that saved bandwidth can be used for a different compressed bitstream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or remotely suggest a second arbitration element that

includes a number of second entries, let alone that each of the second entries includes a stream number that identifies one of the streams, as recited in claim 10.

For at least these additional reasons, Applicants submit that claim 10 is patentable over Zhang et al. and Echeita et al. Claim 12 depends from claim 10 and is, therefore, also patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 10.

Claim 11 recites that the number of the second entries in the second arbitration element is programmable. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or remotely suggest this feature.

The Examiner alleged that Zhang et al. discloses this features and cited column 21, lines 52-67, of Zhang et al. for support (Office Action, paragraph 12). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 21, line 52 - column 22, line 1 (reproduced above), Zhang et al. discloses a bit rate converter apparatus 406 that adjusts the bit rate for each compressed bitstream so that saved bandwidth can be used for a different compressed bitstream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or remotely suggest a second arbitration element that includes a number of second entries, let alone that the number of the second entries in the second arbitration element is programmable, as recited in claim 11.

For at least these additional reasons, Applicants submit that claim 11 is patentable over Zhang et al. and Echeita et al.

Claim 13 recites flow control logic configured to initiate flow control on the storing of data in the memory. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner alleged that Zhang et al.

discloses this feature and cited column 21, lines 52-67, of Zhang et al. for support (Office Action, paragraph 14). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 21, line 52 - column 22, line 1 (reproduced above), Zhang et al. discloses a bit rate converter apparatus 406 that adjusts the bit rate for each compressed bitstream so that saved bandwidth can be used for a different compressed bitstream. Nowhere in this section does Zhang et al. disclose a memory configured to store data associated with a plurality of incoming streams of different speeds and, therefore, Zhang et al. cannot disclose or suggest flow control logic configured to initiate flow control on the storing of data in the memory, as recited in claim 13.

The Examiner relied on column 29, lines 49-57, as allegedly disclosing the memory (Office Action, paragraph 1). At column 29, lines 49-57, Zhang et al. discloses that the network device "may employ one or more memories or memory modules . . . [that] may also be configured to store data streams." Assuming, for the sake of argument, that these one or more memories or memory modules can be equated to a memory configured to store data associated with a plurality of incoming streams of different speeds (a point that Applicants do not concede), nowhere does Zhang et al. disclose or remotely suggest that bit rate converter apparatus 406, or any of the other elements shown in Fig. 5A, is configured to initiate flow control on the storing of data in the memory, as would be required by claim 13.

For at least these additional reasons, Applicants submit that claim 13 is patentable over Zhang et al. and Echeita et al. Claims 14-18 depend from claim 13 and are, therefore, also

patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 13.

Claim 19 recites that each of the streams has an associated watermark for performing flow control on the storing of data in the memory. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner alleged that Zhang et al. discloses this feature and cited column 21, lines 45-51, of Zhang et al. for support (Office Action, paragraph 20). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 21, lines 45-51, Zhang et al. discloses:

The multiplexer 408 also includes the rate controller 409 and a set of multiple input buffers 407. The input buffers 407 temporarily store compressed video data received from the transcoder 406 for each of the input compressed bitstreams until the scheduler 411 processes the compressed video data for transmission. In one embodiment, the multiplexer 408 is an open loop multiplexer.

In this section, Zhang et al. discloses input buffers that temporarily store compressed video data for each of the input compressed bitstreams until scheduler 411 processes the compressed video data for transmission. Nowhere in this section does Zhang et al. disclose or suggest a watermark for performing flow control, let alone each of a plurality of streams that has an associated watermark for performing flow control on the storing of data in memory, as recited in claim 19.

For at least these additional reasons, Applicants submit that claim 19 is patentable over Zhang et al. and Echeita et al.

Claim 20 recites that each of the streams has two associated watermarks for performing flow control on the storing of data in the memory. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner

alleged that Zhang et al. discloses this feature and cited column 21, lines 45-51, of Zhang et al. for support (Office Action, paragraph 21). Applicants submits that Zhang et al. provides no support for the Examiner's allegation.

At column 21, lines 45-51 (reproduced above), Zhang et al. discloses input buffers that temporarily store compressed video data for each of the input compressed bitstreams until scheduler 411 processes the compressed video data for transmission. Nowhere in this section does Zhang et al. disclose or suggest a watermark for performing flow control, let alone each of a plurality of streams that has two associated watermarks for performing flow control on the storing of data in memory, as recited in claim 20.

For at least these additional reasons, Applicants submit that claim 20 is patentable over Zhang et al. and Echeita et al.

Claim 59 recites that at least one of the first arbitration element or the second arbitration element is configured to be reprogrammed when the speed of one of the streams changes. Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or remotely suggest this feature.

The Examiner alleged that Zhang et al. discloses at least one of the first arbitration element or the second arbitration element that is configured to be reprogrammed based on an input regarding a speed of at least one of the streams, and cited column 28, lines 6-19, of Zhang et al. for support (Office Action, paragraph 25). Without acquiescing in the Examiner's allegation, Applicants submit that Zhang et al. does not disclose or suggest at least one of the first arbitration element or the second arbitration element that is configured to be reprogrammed when the speed of one of the streams changes, as recited in claim 59.

At column 28, lines 6-19, Zhang et al. discloses:

While the compressed bitstreams are stored, one or more are retrieved for off-line processing 706. Off-line processing 706 comprises decoding by a decoder 708, encoding by an encoder 712, and generation of the bit rate information by a processing apparatus 714, either while the data is uncompressed or during compression by the encoder 712. The processing apparatus 714 outputs the bit rate information to a combiner 716 that embeds the bit rate information in the compressed bitstream to form a modified compressed bitstream. The output compressed bitstream comprising the video data and the bit rate information are then stored in memory 704. From this point, the modified compressed bitstream may be transmitted or multicast as desired.

In this section, Zhang et al. discloses that bit rate information is embedded in a compressed bitstream to form a modified compressed bitstream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or suggest a first or second arbitration element, let alone at least one of a first arbitration element or a second arbitration element that is configured to be reprogrammed when the speed of one of the streams changes, as recited in claim 59.

For at least these additional reasons, Applicants submit that claim 59 is patentable over Zhang et al. and Echeita et al.

Independent claim 21 is directed to a method comprising storing data from a plurality of streams of potentially different speeds in a memory using a first arbitration scheme that stores data associated with a faster one of the streams in the memory at a higher rate than data associated with a slower one of the streams; and reading the data from the memory using a second arbitration scheme that reads the data associated with the faster one of the streams from the memory at a higher rate than the data associated with the slower one of the streams.

Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 21. For example, Zhang et

al. and Echeita et al. do not disclose or suggest storing data from a plurality of streams of potentially different speeds in a memory using a first arbitration scheme that stores data associated with a faster one of the streams in the memory at a higher rate than data associated with a slower one of the streams, as recited in claim 21. ***The Examiner did not address these features of claim 21 (Office Action, paragraph 1) and, therefore, did not establish a prima facie case of obviousness with regard to claim 21.*** If the Examiner maintains this rejection of claim 21, Applicants request that the Examiner specifically identify what portion(s) of Zhang et al. and/or Echeita et al. allegedly disclose these features of claim 21.

Zhang et al. and Echeita et al. also do not disclose or suggest reading the data from the memory using a second arbitration scheme that reads the data associated with the faster one of the streams from the memory at a higher rate than the data associated with the slower one of the streams, as further recited in claim 21. ***The Examiner also did not address these features of claim 21 (Office Action, paragraph 1) and, therefore, did not establish a prima facie case of obviousness with regard to claim 21.*** If the Examiner maintains this rejection of claim 21, Applicants request that the Examiner specifically identify what portion(s) of Zhang et al. and/or Echeita et al. allegedly disclose these features of claim 21.

For at least these reasons, Applicants submit that claim 21 is patentable over Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination. Claims 22-39 and 61 depend from claim 21 and are, therefore, patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 21. Claims 22-39 and 61 also recite features similar to, but possibly different in scope from, features recited in claims 2-20 and 59. Claims 22-39

and 61 are, therefore, also patentable over Zhang et al. and Echeita et al. for at least reasons similar to reasons given with regard to claims 2-20 and 59.

Independent claim 40 is directed to a system for performing flow control on data in a plurality of incoming streams of variable speeds. The system comprises a buffer configured to temporarily store data from a plurality of streams of variable speeds in a plurality of entries, a counter configured to determine a number of entries in the buffer corresponding to each of the streams, and a comparator configured to determine whether to initiate flow control for each of the streams based on the determined number of entries for the stream.

Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 40. For example, Zhang et al. and Echeita et al. do not disclose or suggest a counter that is configured to determine a number of entries in the buffer corresponding to each of the streams of variable speeds. ***The Examiner did not address this feature of claim 40 (Office Action, paragraph 1) and, therefore, did not establish a prima facie case of obviousness with regard to claim 40.***

When rejecting a feature in claim 16, however, the Examiner alleged that Zhang et al. discloses a counter that is configured to determine a number of entries in a buffer corresponding to each of the streams, and cited column 29, lines 49-57, of Zhang et al. for support (Office Action, paragraph 17). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 29, lines 49-57, Zhang et al. discloses that the network device "may employ one or more memories or memory modules . . . [that] may also be configured to store data streams." Even assuming, for the sake of argument, that these one or more memories or memory

modules can be equated to a buffer configured to temporarily store data from a plurality of streams of variable speeds in a plurality of entries (a point that Applicants do not concede), nowhere does Zhang et al. disclose or remotely suggest a counter that is configured to determine a number of entries in the buffer corresponding to each of the streams of variable speeds, as recited in claim 40.

Zhang et al. and Echeita et al. also do not disclose or suggest a comparator configured to determine whether to initiate flow control for each of the streams based on the determined number of entries for the stream, as further recited in claim 40. ***The Examiner did not address this feature of claim 40 (Office Action, paragraph 1) and, therefore, did not establish a prima facie case of obviousness with regard to claim 40.***

When rejecting a feature in claim 16, however, the Examiner alleged that Zhang et al. discloses a comparator configured to determine whether to initiate flow control for each of the streams based on the determined number of entries for the stream and cited column 21, lines 52-67, of Zhang et al. for support (Office Action, paragraph 17). Applicants submit that Zhang et al. provides no support for the Examiner's allegation.

At column 21, lines 52-67 (reproduced above), Zhang et al. discloses a bit rate converter apparatus 406 that adjusts the bit rate for each compressed bitstream so that saved bandwidth can be used for a different compressed bitstream. Nowhere in this section, or elsewhere, does Zhang et al. disclose or suggest a comparator configured to determine whether to initiate flow control for each of the streams of variable speeds based on the determined number of entries for the stream, as recited in claim 40.

For at least these reasons, Applicants submit that claim 40 is patentable over Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination. Claims 41-47 depend from claim 40 and are, therefore, patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 40.

Independent claims 48 and 55 recite features similar to, but possibly different in scope from, features recited in claim 40. Claims 48 and 55 are, therefore, patentable over Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, for at least reasons similar to reasons given with regard to claim 40. Claims 49-54 depend from claim 48 and are, therefore, patentable over Zhang et al. and Echeita et al. for at least the reasons given with regard to claim 48.

Independent claim 56 is directed to a network device that comprises an input interface configured to receive a plurality of packets belonging to a plurality of streams of differing speeds, access a first arbitration scheme that services a faster one of the streams more often than a slower one of the streams, and output the packets based on the first arbitration scheme; input logic comprising flow control logic configured to initiate flow control on the packets output by the input interface, a memory configured to store the packets from the input interface, and a dispatch unit configured to access a second arbitration scheme that services the faster one of the streams more often than the slower one of the streams, and read the packets from the memory based on the second arbitration scheme; and one or more packet processors configured to process the packets from the dispatch unit.

Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 56. For example, Zhang et

al. and Echeita et al. do not disclose or suggest an input interface configured to, among other things, access a first arbitration scheme that services a faster one of the streams more often than a slower one of the streams and output packets based on the first arbitration scheme, for at least reasons similar to reasons given with regard to claim 21.

Zhang et al. and Echeita et al. also do not disclose or suggest a dispatch unit configured to access a second arbitration scheme that services the faster one of the streams more often than the slower one of the streams, and read packets from the memory based on the second arbitration scheme, as further recited in claim 56, for at least reasons similar to reasons given with regard to claim 21.

For at least these reasons, Applicants submit that claim 56 is patentable over Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination.

Independent claim 57 is directed to a network device that comprises means for receiving a plurality of packets belonging to a plurality of streams of potentially different speeds; means for storing the packets based on a first arbitration scheme that stores the packets based on the speeds of the streams to which the packets belong; means for performing flow control on the storing of the packets; means for reading the packets based on a second arbitration scheme that reads the packets based on the speeds of the streams to which the packets belong; and means for processing the packets read based on the second arbitration scheme.

Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 57. For example, Zhang et al. do not disclose or suggest means for storing the packets based on a first arbitration scheme that stores the packets based on the speeds of the streams to which the packets belong.

When addressing claim 57, the Examiner did not specifically address this feature (Office Action, paragraph 1). With regard to claim 58, however, the Examiner alleged that Zhang et al. discloses a first arbitration element that is configured to arbitrate among streams of variable speeds to store data in a memory based on the speeds of the streams and cited column 20, lines 40-48, of Zhang et al. for support (Office Action, paragraph 24). Without acquiescing in the Examiner's allegation, Applicants submit that Zhang et al. does not disclose or suggest means for storing the packets based on a first arbitration scheme that stores the packets based on the speeds of the streams to which the packets belong, as recited in claim 57.

At column 20, lines 40-48, Zhang et al. discloses:

In one embodiment where the bit rate information is stored in a storage location of the compressed bitstream, the extractor apparatus 404 knows potential locations where the bit rate information may be stored, checks each location, and extracts the bit rate information from the storage location when found. The extractor apparatus 404 may also depacketize the bit rate information into data streams before outputting the bit rate information to the rate controller 409.

In this section, Zhang et al. discloses an extractor apparatus that knows potential locations where bit rate information may be stored, checks each location, and extracts the bit rate information from the storage location when found. Nowhere in this section, or elsewhere, does Zhang et al. disclose or suggest means for storing packets based on a first arbitration scheme that stores the packets based on the speeds of the streams to which the packets belong, as recited in claim 57.

Zhang et al. and Echeita et al. also do not disclose or suggest means for reading the packets based on a second arbitration scheme that reads the packets based on the speeds of the streams to which the packets belong, as further recited in claim 57.

When addressing claim 57, the Examiner did not specifically address this feature (Office Action, paragraph 1). With regard to claim 58, however, the Examiner alleged that Zhang et al. discloses a second arbitration element that is configured to arbitrate among streams of variable speeds to read data from a memory based on the speeds of the streams and cited column 20, lines 40-48, of Zhang et al. for support (Office Action, paragraph 24). Without acquiescing in the Examiner's allegation, Applicants submit that Zhang et al. does not disclose or suggest means for reading the packets based on a second arbitration scheme that reads the packets based on the speeds of the streams to which the packets belong, as recited in claim 57.

At column 20, lines 40-48 (reproduced above), Zhang et al. discloses an extractor apparatus that knows potential locations where bit rate information may be stored, checks each location, and extracts the bit rate information from the storage location when found. Nowhere in this section, or elsewhere, does Zhang et al. disclose or suggest means for reading the packets based on a second arbitration scheme that reads the packets based on the speeds of the streams to which the packets belong, as recited in claim 57.

For at least these reasons, Applicants submit that claim 57 is patentable over Zhang et al. and Echeita et al., whether taken alone or in any reasonable combination.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of the application and the timely allowance of pending claims 1-57, 59, and 61-63.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicants' silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a

reference constitutes prior art, reasons for modifying a reference and/or combining references, assertions as to dependent claims, etc.) is not a concession by Applicants that such assertions are accurate or such requirements have been met, and Applicants reserve the right to analyze and dispute these assertions/requirements in the future.

If the Examiner does not believe that all pending claims are now in condition for allowance, the Examiner is urged to contact the undersigned to expedite prosecution of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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